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PaperPick

Blebs on the Move

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This paper caught my eye because it showed for the first time that cells really move by blebbing as a physiological process in vivo, and by doing so, it made the whole process of blebbing come to life. I had first come across apoptotic cell blebbing during my PhD research. I was introduced to the concept of bleb-based movement by a talk at a conference about 10 years before the Blaser et al. paper, but the earlier studies only looked at a somewhat unusual cancer cell line moving in vitro. Blaser and colleagues took advantage of advances in observing cells by microscopy in vivo to generate the fast movie series required to detect blebbing and to link the blebs to calcium transients and subsequent myosin II contraction. Importantly, they demonstrated that the bleb-based migration could be directional and that germ cells end up in the right place in the zebrafish embryo simply by blebbing repeatedly in the same direction, in contrast to the randomly-directed blebbing seen in apoptotic cells. This PaperPick refers to "Migration of Zebrafish Primordial Germ Cells: A Role for Myosin Contraction and Cytoplasmic Flow" by H. Blaser, M. Reichman-Fried, I. Castanon, K. Dumstrei, F.L. Marlow, K. Kawakami, L. Solnica-Krezel, C.P. Heisenberg, and E. Raz, published in November, 2006.